**Ground-level Ozone and Smog Name here:** Cheyna Smart

1. **Read what smog is.**
2. **http://esa21.kennesaw.edu/activities/smog-city/smog-city.pdf**
3. **Click on the link Ozone: Good up High, Bad Nearby**
   1. **How is ozone both good and bad?** It is good in the stratosphere because it protects the earth and its organisms from harmful UV ray form the sun. It is bad at ground level because at ground level, it is composed of air pollutants which are harmful to human health and vegetation.
   2. **Scroll down to Bad Ozone. What causes bad ozone?** It is created by chemical reactions between oxides of nitrogen (NOx) andvolatile organic compounds (VOC) in the presence of sunlight.Emissions from industrial facilities and electric utilities, motor vehicleexhaust, gasoline vapors, and chemical solvents are some of themajor sources of NOx and VOC.
   3. **What time of year is worst for ground-level ozone?** The summer because hot air makes the pollutants in the air rise and get closer to the “good” ozone.
   4. **How can we reduce ground-level ozone?**
4. **Use the Back Arrow on your tool bar to go back to the main page.**
5. **Scroll down and click on the link: How Ozone is Formed. Click on Make Ozone. Summarize the process of smog formation.** When volatile organic compounds, nitrogen oxide, sunlight, and stagnant air mass mix together.
6. **Use the Back Arrow on Tool bar to go back to the main page. (It may have opened in a new tab)**
7. **Go into the link: Thermal Inversion and Smog. Explain Thermal Inversions.** Every 1,000 meters you go up from sea level, the temperature drops 6.5 degrees. The colder air helps the pollutants mix.
8. **Summarize photochemical smog information here. Use the Back Arrow to go back to the main page.** It is the brownish-grey smog that fills cities. It is formed of a mixture of air pollution. Smog is most harmful in warm weather.
9. **Go into the link: Lung Attack. Click on all of the links to see breathing normal and with all of the pollution factors. Contrast normal breathing with breathing with Ozone, Big particles, Small particles, and carbon monoxide. You may do this in table format.**

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| --- | --- |
| **Normal Breathing** |  |
| **Breathing with Ozone** |  |
| **Breathing with Big particles** |  |
| **Breathing with Small particles** |  |
| **Breathing with Carbon Monoxide** |  |

1. **Go back to the main page.**
2. **Go into the link: Smog, Who does it Hurt? Read the article and answer “How can I avoid unhealthy exposure to ozone?”**
3. **Go back to the main page.**
4. **Go into the link: Smog City and get the ESA 21: Environmental Science Activities packet. You will be working on the simulation from here on.**